WEED CONTROL TRIALS 1985

Alberta
AGRICULTURE
Crop Protection Branch
Weed Control Section

This report contains summaries of weed control trials conducted by the Weed Control Section of the Crop Protection Branch, Plant Industry Division, Alberta Agriculture.

The results presented within are not meant, nor should be construed, to be recommendations as some of the herbicides are not yet registered. However, they can be used as background information as to the performance of these herbicides or herbicide uses. This booklet can be readily taken apart for filing purposes.

Thanks and appreciation is extended to all the District Agriculturists and Agricultural Fieldmen who helped with the trials by making local arrangements, fencing and/or assisting in staking and assessing the plots. Thanks to the landowners as well for making land available. This assistance and co-operation is necessary for the conducting of these weed control trials. Appreciation is also extended to the herbicide manufacturers and their technical representatives for providing the materials and counselling.

If you have any questions, comments or suggestions please contact:

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TANSY CONTROL ON ROADSIDES

Co-operators: John Jusypink, Agricultural Fieldman, Smoky Lake
Alberta Transportation
Crop Protection Branch, Alberta Agriculture

Plot Location: 22.5 km east of Smoky Lake on highway 28

Spray Date: July 5, 1985 - partly overcast 17°C, wind 2-5 km/hr from south

Spray Volume: 45 litres per acre

Weed Stage: Early bud, 10-110 cm (average 45 cm) in height

Crop Stage: Brome (55 cm) and bluegrass (40 cm) headed out

Treatment	Rate g/ac	Tansy Control Visual Rating* Aug 20/85	Tansy Control Visual Rating* Sept 24/85	Tansy % Stand Reduction** Aug 20/85	Tansy % Stand Reduction** Sept 24/85	Approx. 1985 Cost/ac
Unsprayed check		0	0	0	0	
Glean + Agral 90	6 + 0.1%	4	7	24	94	$ 4.50
Glean + Agral 90	8 + 0.1%	6	9	56	100	6.00
Glean + Agral 90	10 + 0.1%	5	8	48	89	7.50
Glean + Agral 90	12 + 0.1%	5	9	52	99	8.50
Glean + Agral 90	24 + 0.1%	7	9	75	99	17.00
DPX T6376 + Agral 90	3 + 0.1%	6	9	55	98	--
DPX T6376 + Agral 90	6 + 0.1%	7	9	86	99	--
DPX M6316 + Agral 90	16 + 0.1%	4	8	20	94	--
DPX M6316 + Agral 90	32 + 0.1%	4	8	39	96	--
DPX 5648 + Agral 90	20 + 0.1%	6	8	59	98	--
DPX 5648 + Agral 90	40 + 0.1%	7	9	85	100	--
DPX 5648	20	6	9	70	98	--
DPX 5648	40	6	9	82	98	--
Tordon 22K	0.47 L/ac	4	6	43	72	13.50
Tordon 22K	0.71 L/ac	6	8	55	98	20.50
Tordon 22K	1.42 L/ac	8	9	97	100	41.00

*0 = no control, 9 = complete control

**The percent stand reduction was determined by comparing the initial square meter shoot counts made at spraying time with the counts made on August 20, 1985 and September 24, 1985 in the same marked locations.

Results: The high rate of Glean, DPX T6376, DPX 5648 and Tordon 22K provided good tansy control six weeks after treatment. All treatments provided good tansy control twelve weeks after treatment. Only the high rate of Tordon 22K caused initial suppression of the grasses.

Please Note: Glean is not yet registered for use on roadsides and DPX T6376 (Ally), DPX M6316 (Harmony) and DPX 5648 (Oust) are not yet registered for use in Alberta. Tordon 22K can only be applied by an authorized pesticide applicator (November/85).

SUPPRESSION OF TOADFLAX IN CEREALS (1985)

Co-operators: Norman Soder, Agricultural Fieldman, Three Hills
Art Thomas, Asst. Agricultural Fieldman, Three Hills
Jack Hazelwood, District Agriculturist, Three Hills
Scott Meers, District Agriculturist, Three Hills
Norman Hoppins, Landowner, Huxley
Crop Protection Branch, Alberta Agriculture

Plot Location: 13.6 km west of Huxley.

Spray Date: June 26, 1985 - 22°C, wind 0-5 km/hr from south east

Spray Volume: 45 litres per acre

Weed Stage: 10-60 leaf, mostly 15 cm in height (10% seedlings).

Crop Stage: Betzes barley at 5 leaf (2-4 tillers), 23 cm.

Treatment	Rate L/ac	Toadflax - August 27, 1985 Visual Rating*	% Flowering	Height (cm)	% Stand Reduction**	Approx. 1985 Cost/ac
Unsprayed check		0	80	31	0	
Banvel	0.11	1	45	23	0	$ 2.00
MCPA-K	0.89	0	70	26	0	3.00
Dyvel	0.52	3	13	19	0	3.50
Banvel-K	0.09	1	63	25	3	--
Banvel-K + MCPA-K	0.09 + 0.43	2	59	25	0	--
MCPA ester	0.71	3	27	21	0	3.00
Banvel + MCPA ester	0.11 + 0.35	2	29	18	0	3.50
Mecoturf	2.71	0	79	34	0	13.50
Mecoturf	4.05	7	2	15	48	20.00
Estaprop	0.67	4	42	20	0	4.00
Estaprop	1.01	7	4	16	27	6.00
DPX M6316 + Agral 90	27 g/ac + 0.1%	1	53	21	0	--
DPX T6376 + Agral 90	3 g/ac + 0.1%	2	60	22	0	--
Buctril M	0.58	1	59	29	0	7.50
Target	0.61	3	32	22	0	4.50
Lontrel	0.61	1	55	25	0	35.50

*0 = no control, 9 = complete control

**The percent stand reduction was determined by comparing the initial square meter shoot counts made at spraying time with the counts made on August 27, 1985 in the same marked locations.

Results: Mecoturf at 4.05 L/acre and Estaprop at 1.01 L/acre provided some stand reduction, stunting and reduced flowering of toadflax. Dyvel reduced the height and flowering of toadflax but did not reduce the stand. An average of 68 toadflax seedlings per square meter emerged in all treatments in August. None of the treatments injured the barley.

Please Note: The higher rates of Mecoturf and Estaprop and the Buctril M rate are 1½ times the registered rates of these herbicides; the Banvel + MCPA ester is not a registered tank mix; Lontrel is not registered for use in barley; and Banvel-K, DPX M6316 (Harmony) and DPX T6376 (Ally) are not yet registered for use in Alberta (November/85).

TOADFLAX CONTROL ONE YEAR AFTER TREATMENT IN BARLEY

Co-operators: Norman Soder, Agricultural Fieldman, Three Hills
Jack Hazelwood, District Agriculturist, Three Hills
N. Hoppins, Landowner, Huxley
Crop Protection Branch, Alberta Agriculture

Plot Location: 13.6 km west of Huxley

Spray Date: June 29, 1984 - 20°C, wind 0-10 km/hr from north east

Spray Volume: 45 litres per acre

Weed Stage: 40 leaf, 15 cm (5% seedlings)

Crop Stage: 3-4½ leaf, 15-30 cm

Treatment	Rate L/ac	% Stand Reduction Aug. 1/84	% Stand Reduction June 26/85	Approx. 1985 Cost/ac
Weedy check		0	0	$
2,4-D amine	.44	9	0	1.50
MCPA amine 500	.71	9	0	2.50
Banvel	.11	18	0	2.00
Torch D.S.	.30	0	0	5.50
Buctril M (560 g/L)	.40	0	0	5.00
Blagal	.91	0	0	5.50
Tordon 202C	.81	0	0	3.50
Glean + Agral 90	12 g/ac + 0.1%	0	0	9.00
DPX T6376 + Agral 90	19 g/ac + 0.1%	26	0	--
DPX M6316 + Agral 90	26 g/ac + 0.1%	5	0	--
Estaprop	.71	31	0	4.00
Stampede CM	1.11	0	0	9.00
Lorox + MCPA amine	.22 + .44	0	0	6.00
Target	.61	0	0	4.50
Lexone DF-F	142 g/ac	0	0	8.50
Mecoturf	2.83	24	0	13.50

*The percent stand reduction was determined by comparing the square meter shoot counts made on August 1, 1984 and June 26, 1985 with the counts made at the time of spraying in 1984 in the same marked locations.

Results: DPX T6376, Estaprop, Mecoturf and Banvel provided some stand reduction of toadflax in the year of application but none of the treatments provided a toadflax stand reduction one year after application. There was an average of 187 toadflax shoots per square meter on June 26, 1985 compared to an average of 95 shoots per square meter on June 29, 1984.

Please Note: This was a screening trial using only the high recommended rate for use in barley of each of the herbicides and mixtures included. DPX T6376 (Ally) and DPX M6316 (Harmony) are not yet registered for use in Alberta (November/85).

TOLERANCE OF SEEDLING LEGUMES TO HERBICIDES FOR BROADLEAVED WEED CONTROL

Co-operators: Dr. Lloyd Darwent, Agriculture Canada, Beaverlodge
Dr. Jim Moyer, Agriculture Canada, Lethbridge
Ken Lopetinsky, Alberta Agriculture, Barrhead
Rick Bjorge, District Agriculturist, Westlock
Rod Carlyon, District Agriculturist, Westlock
Ken Stanley, Landowner, Westlock
Crop Protection Branch, Alberta Agriculture

Plot Location: 18 km west of Westlock and 5 km north

Spray Date: July 10, 1984 - 22°C, no wind

Spray Volume: 45 litres per acre

Crop Stage: Beaver alfalfa - 5 trifoliate leaf, 10 cm; Altaswede red clover - 3 trifoliate leaf, 7 cm; Leo bird's-foot trefoil - 6 trifoliate leaf, 6 cm

Treatment	Rate L/ac	Crop Tolerance Visual Rating** July 17/84 Alf	Clo	Tre	May 22/85 Alf	Clo	Tre*	Approx. 1985 Cost/acre
Unsprayed check		9	9	9	9	9	9	
Basagran + Assist	0.84 + 2%	5	6	1	9	9	3	$ 24.00
Basagran + Assist	1.68 + 2%	4	4	0	9	9	1	46.00
Torch D.S.	0.18	6	4	5	9	9	9	3.00
Torch D.S.	0.36	6	4	4	9	9	9	6.00
Stampede 360	1.12	6	4	5	8	9	8	8.00
Stampede 360	2.25	4	4	3	9	9	7	16.00
Lexone DF + Embutox E	81 g/ac + 1.11	4	3	1	9	9	7	12.00
Lexone DF + Embutox E	162 g/ac + 1.11	3	2	1	9	9	5	16.50
Embutox E	1.11	8	9	8	9	9	8	7.00
Butyrac 200	1.69	9	9	9	9	9	8	—
Butyrac 200	2.53	8	8	9	9	9	7	—

*Alf = alfalfa Clo = red clover Tre = bird's-foot trefoil
**0 = no tolerance, 9 = complete tolerance

Results: Recovery of the three legume species was good even though there was injury by most the treatments. The bird's-foot trefoil treated with Basagran and the high rate of Lexone DF tank mixed with Embutox E continued to exhibit sparse growth one year after treatment.

Please Note: This was a screening trial using herbicides that are not registered for use on seedling legumes. Only Embutox E is registered for use on seedling alfalfa and bird's-foot trefoil. Butyrac 200 is not yet registered for use in Alberta (November/85).

TOLERANCE OF SEEDLING GRASSES TO HERBICIDES FOR BROADLEAVED WEED CONTROL I

Co-operators: Dr. Lloyd Darwent, Agriculture Canada, Beaverlodge
Dr. Jim Moyer, Agriculture Canada, Lethbridge
Ken Lopetinsky, Alberta Agriculture, Barrhead
Rick Bjorge, District Agriculturist, Westlock
Rod Carlyon, District Agriculturist, Westlock
Ken Stanley, Landowner, Westlock
Crop Protection Branch, Alberta Agriculture

Plot Location: 18 km west of Westlock and 5 km north

Spray Date: July 10, 1984 - 22°C, no wind

Spray Volume: 45 litres per acre

Crop Stage: Carlton bromegrass - 3-4 leaf, 10 cm; Climax timothy - 2-4 leaf, 7 cm; meadow foxtail - 2-3 leaf, 6 cm

Treatment	Rate L/ac	Crop Tolerance Visual Rating** July 17/84 Bro	Tim	Fox	May 22/85 Bro	Tim	Fox*	Approx. 1985 Cost/acre
Unsprayed check		9	9	9	9	9	9	
Basagran + Assist	0.84 + 2%	8	8	9	9	9	9	$ 24.00
Basagran + Assist	1.68 + 2%	8	8	8	9	9	9	46.00
Torch D.S.	0.18	9	9	9	9	9	9	3.00
Torch D.S.	0.36	8	9	8	9	9	9	6.00
Stampede 360	1.12	8	8	8	8	8	8	8.00
Stampede 360	2.25	8	8	9	8	8	8	16.00
Lexone DF + Embutox E	81 g/ac + 1.11	6	6	5	8	9	9	12.00
Lexone DF + Embutox E	162 g/ac + 1.11	5	5	4	8	8	7	16.50
Embutox E	1.11	8	8	8	8	8	8	7.00
Butyrac 200	1.69	9	9	9	7	8	8	--
Butyrac 200	2.53	9	9	9	8	9	8	--

*Bro = bromegrass Tim = timothy Fox = meadow foxtail
**0 = no tolerance, 9 = complete tolerance

Results: Lexone DF tank mixed with Embutox E initially injured the three grasses but they recovered by September, 1984. All three grass species exhibited tolerance to all treatments one year after application.

Please Note: This was a screening trial using herbicides that are not registered for use on seedling legumes. Only Torch D.S. is registered for use on seedling bromegrass and timothy grown for seed. Butyrac 200 is not yet registered for use in Alberta (November/85).

TOLERANCE OF SEEDLING GRASSES TO HERBICIDES FOR BROADLEAVED WEED CONTROL II

Co-operators: Dr. Lloyd Darwent, Agriculture Canada, Beaverlodge
Dr. Jim Moyer, Agriculture Canada, Lethbridge
Ken Lopetinsky, Alberta Agriculture, Barrhead
Rick Bjorge, District Agriculturist, Westlock
Rod Carlyon, District Agriculturist, Westlock
Ken Stanley, Landowner, Westlock
Crop Protection Branch, Alberta Agriculture

Plot Location: 18 km west of Westlock and 5 km north (pH 7.8)

Spray Date: July 10, 1984 - 22°C, no wind

Spray Volume: 45 litres per acre

Crop Stage: Carlton bromegrass - 3-4 leaf, 10 cm; Climax timothy - 2-4 leaf, 7 cm; meadow foxtail - 2-3 leaf, 6 cm

Treatment	Rate L/ac	Crop Tolerance Visual Rating* May 22/85			Approx. 1985 Cost/acre
		Brome	Timothy	Meadow Foxtail	
Unsprayed check		9	9	9	
Blagal	0.91	8	9	9	$ 5.50
Blagal	1.81	8	8	8	11.00
Lorox + MCPA amine	0.18 + 0.34	9	9	8	5.00
Lorox + MCPA amine	0.23 + 0.45	9	8	8	6.50
Glean + Agral 90	3 g/ac + 0.1%	8	7	4	2.50
Glean + Agral 90	6 g/ac + 0.1%	7	4	2	4.50
Glean + Agral 90	12 g/ac + 0.1%	6	2	0	9.00
Lontrel	0.40	8	9	8	23.00
Lontrel	0.60	8	9	9	35.00
Lontrel + 2,4-D amine	0.60 + 0.45	8	8	8	37.00
2,4-D amine	0.45	7	8	7	2.00

*0 = no tolerance, 9 = complete tolerance

Results: Glean reduced the stand of all three grass species the following spring after application. Meadow foxtail was the most sensitive to the Glean. These are the results of the first assessment of this trial.

Please Note: This was a screening trial using herbicides that are not registered for use on seedling grasses. Only 2,4-D amine is registered for use on grasses (November/85).

TALL BUTTERCUP CONTROL IN PASTURE (ROCKY MOUNTAIN HOUSE)

Co-operators: Kim Neilson, Agricultural Fieldman, Rocky Mountain House
Gabriele Patterson, former Agricultural Fieldman, Rocky Mountain House
Fernie Chevallier, Landowner, Rocky Mountain House
Crop Protection Branch, Alberta Agriculture

Plot Location: 0.5 km south of Rocky Mountain House on highway 752 (NE 16-39-7-W5)

Spray Date: June 9, 1983 - cloudy, 20°C, no wind

Spray Volume: 45 litres per acre

Weed Stage: Late bud to flowering (15% flowering), 20-45 cm tall

Forage Height: Kentucky blue grass - 30 cm, timothy - 30 cm, alsike clover - 10 cm

Treatment	Rate L/ac	July 23, 1985 Buttercup Control Visual Rating*	% Stand Reduction**	Approx. 1985 Cost/ac
Unsprayed check		0	0	
2,4-D amine 500	1.82	1	33	$ 6.00
MCPA amine 500	0.91	7	47	3.50
MCPA amine 500	1.82	8	91	7.00
Embutox E	1.72	0	17	11.00
Banvel	1.11	4	34	20.00
Banvel	2.22	4	17	40.00
Banvel + MCPA amine 500	1.11 + 0.44	5	69	22.00
Tordon 202C	2.43	0	12	10.00
Tordon 22K	0.93	7	85	28.00
Glean + Agral 90	12 g/ac + 0.1%	2	0	9.00
Glean + Agral 90	24 g/ac + 0.1%	5	28	18.00
DPX T6376 + Agral 90	16 g/ac + 0.1%	4	0	—
Lontrel (360 g/L)	0.33	0	0	34.00

*0 = no control, 9 = complete control

**The percent stand reduction was determined by comparing the initial square meter plant counts made at spraying time in 1983 with the counts made on July 23, 1985 in the same marked locations.

Results: MCPA amine at 1.82 L/acre and Tordon 22K at 0.93 L/acre continued to provide good tall buttercup control into the third year after application.

Please Note: Tordon 202C, Glean and Lontrel are not registered for use in pastures and DPX T6376 (Ally) is not yet registered for use in Alberta (November/85).

TALL BUTTERCUP CONTROL IN PASTURE (ECKVILLE)

Co-operators: Kim Neilson, Agricultural Fieldman, Rocky Mountain House
Gabriele Patterson, former Agricultural Fieldman, Rocky Mountain House
Rudolph Lipka, Landowner, Eckville
Crop Protection Branch, Alberta Agriculture

Plot Location: 11 km south of highway 11 from Hespero cemetary

Spray Date: June 6, 1984 - 15°C, wind 0-2 km/hr from north

Spray Volume: 45 litres per acre

Weed Stage: 10-40 leaf, 17 cm (not yet flowering)

Forage Height: Timothy, Kentucky blue grass and reed grass - 15-30 cm

Treatment	Rate L/ac	July 23, 1985 Buttercup Control Visual Rating*	July 23, 1985 Buttercup Control % Stand Reduction**	Approx. 1985 Cost/ac
Unsprayed check		0	10	
2,4-D amine 500	1.82	3	63	$ 6.00
MCPA amine 500	0.69	5	40	2.50
MCPA amine 500	0.91	5	59	3.50
MCPA amine 500	1.82	8	81	7.00
Banvel	0.81	3	0	14.50
Banvel	1.11	4	26	20.00
Tordon 202C	2.43	3	26	10.00
Glean + Agral 90	6 g/ac + 0.1%	4	0	4.50
Glean + Agral 90	12 g/ac + 0.1%	7	76	9.00
DPX T6376 + Agral 90	4 g/ac + 0.1%	3	0	--
DPX T6376 + Agral 90	8 g/ac + 0.1%	4	0	--
Estaprop	0.69	4	0	4.00
Tropotox Plus	1.72	3	0	11.00

*0 = no control, 9 = complete control

**The percent stand reduction was determined by comparing the initial square meter plant counts made at spraying time with the counts made on July 23, 1985 in the same marked locations and adjusting these values using the average decrease in tall buttercup plant counts in the unsprayed check plots (46%).

Results: MCPA amine to 1.82 L/acre and Glean at 12 g/acre continued to provide good control of tall buttercup into the second year after application. There was a natural reduction in the tall buttercup population in all treatments, including the unsprayed check, with an increase in the grass growth.

Please Note: Tordon 202C, Glean and Estaprop are not registered for use in pastures and DPX T6376 (Ally) is not yet registered for use in Alberta (November/85).

TALL BUTTERCUP CONTROL IN PASTURE (EVANSBURG)

Co-operators: George Greenhough, Agricultural Fieldman, Evansburg
Dave Herzog, Landowner, Evansburg
Crop Protection Branch, Alberta Agriculture

Plot Location: 5.8 km west of Evansburg on highway 16, 3 km south, .75 km east - north side of the road

Spray Date: June 14, 1984 - 25°C, wind 0-2 km/hr from south east

Spray Volume: 45 litres per acre

Weed Stage: 6 leaf, 43 cm (20% flowering)

Forage Height: Kentucky blue grass - 38-50 cm, smooth brome - 50-63 cm, alsike clover - 30-50 cm

		July 24, 1985			
		Clover	Buttercup Control		Approx.
Treatment	Rate L/ac	Tolerance Visual Rating*	Visual Rating**	% Stand Reduction***	1985 Cost/ac
Unsprayed check		9	0	0	
2,4-D amine 500	1.82	0	1	0	$ 6.00
MCPA amine 500	0.69	7	4	71	2.50
MCPA amine 500	0.91	7	6	56	3.50
MCPA amine 500	1.82	8	7	89	7.00
Banvel	0.81	0	2	42	14.50
Banvel	1.11	0	2	17	20.00
Tordon 202C	2.43	0	4	0	10.00
Glean + Agral 90	6 g/ac + 0.1%	0	1	0	4.50
Glean + Agral 90	12 g/ac + 0.1%	0	3	44	9.00
DPX T6376 + Agral 90	4 g/ac + 0.1%	0	3	2	--
DPX T6376 + Agral 90	8 g/ac + 0.1%	0	4	32	--
Estaprop	0.69	4	2	24	4.00
Tropotox Plus	1.72	9	5	56	11.00

*0 = no tolerance, 9 = complete tolerance

**0 = no control, 9 = complete control

***The percent stand reduction was determined by comparing the number of buttercup plants in the treatment plots with the number in the unsprayed weedy check plots.

Results: MCPA amine at 1.82 L/acre continued to provide good control tall buttercup into the second year after application. 2,4-D amine did not provide control. All treatments except Tropotox Plus and MCPA amine, removed the alsike clover.

Please Note: Tordon 202C, Glean and Estaprop are not registered for use in pastures and DPX T6376 (Ally) is not yet registered for use in Alberta (November/85).

TALL BUTTERCUP CONTROL IN PASTURE
ONE YEAR AFTER SPRAYING
6 LOCATIONS IN ALBERTA

TREATMENT	RATE L/Ac	% STAND REDUCTION*	# OF LOCATIONS INCLUDED IN AVERAGE	1985 COST/Ac
CHECK		0		
LONTREL	0.33	0	1	$ 34.00
ESTAPROP	0.69	12	2	4.00
2,4-D AMINE	1.82	28	6	6.00
BANVEL	0.81	21	2	14.50
BANVEL	1.11	21	6	20.00
BANVEL	2.22	20	4	40.00
BANVEL + MCPA	1.11 + 0.44	46	4	22.00
TORDON 202C	2.43	43	4	10.00
EMBUTOX E	1.72	42	4	11.00
TROPOTOX PLUS	1.72	28	2	11.00
GLEAN	6 G/Ac	0	2	4.50
GLEAN	12 G/Ac	29	6	9.00
GLEAN	24 G/Ac	28	4	18.00
DPX T6376 (ALLY)	4 G/Ac	1	2	--
DPX T6376 (ALLY)	8 G/Ac	16	2	--
DPX T6376 (ALLY)	16 G/Ac	24	4	--
MCPA AMINE	0.69	55	2	2.50
MCPA AMINE	0.91	53	6	3.50
MCPA AMINE	1.82	81	6	7.00
TORDON 22K	0.93	91	4	28.00

* AN AVERAGE OF UP TO 6 LOCATIONS IN ALBERTA (ROCKY MOUNTAIN HOUSE, RIMBEY, EDSON, PINCHER CREEK, ECKVILLE, EVANSBURG) OVER THREE YEARS OF TRIALS (1983, 1984 AND 1985). SEE INDIVIDUAL WRITE-UPS FOR DETAILS.

1985 RESEARCH HIGHLIGHTS

Weed Research and Development, Crop Protection Branch, Alberta Agriculture

TALL BUTTERCUP CONTROL IN PASTURE

MCPA amine 500 at 1.8 L/acre continued to provide good tall buttercup control into the third year after application in a grass pasture. It was applied at the late bud to flowering stage (15% flowering) of tall buttercup. This treatment costs approximately $7.00 per acre.

SUPPRESSION OF TOADFLAX IN CEREALS

Estaprop at 1.0 L/acre provided some suppression and stand reduction of toadflax in a barley crop when applied to toadflax that was 15 cm in height. This is 1½ times the registered rate of Estaprop although the barley was not injured. This treatment costs approximately $6.00 per acre.

TANSY CONTROL ON ROADSIDES

Tordon 22K as low as 0.7 L/acre, Glean as low as 6 g/acre plus 0.1% Agral 90 and three DuPont experimental herbicides provided good tansy control into the fall of the year that these herbicides were applied. They were applied on a grass roadside on July 5, 1985 to tansy that was in the early bud stage and averaging 45 cm in height. The Tordon 22K cost approximately $20.50 per acre and the Glean cost approximately $4.50 per acre. We will be monitoring the long term control into the second year after application.

TOLERANCE OF SEEDLING GRASSES TO HERBICIDES FOR BROAD-LEAVED WEED CONTROL

Bromegrass, timothy and meadow foxtail were showing good tolerance to

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Blagal 1.8 L/acre ($11.00/acre), Lorox 0.23 L/acre plus MCPA amine 500 0.45 L/acre ($6.50/acre), Lontrel 0.6 L/acre ($35.00/acre), Lontrel 0.6 L/acre plus 2,4-D amine 500 0.45 L/acre ($37.00/acre), 2,4-D amine 500 0.45 L/acre ($2.00/acre), Basagran 1.7 L/acre plus Assist 2% ($46.00/acre), Torch D.S. 0.36 L/acre ($6.00/acre), Stampede 360 2.25 L/acre ($16.00/acre), Lexone DF 0.16 kg/acre plus Embutox E 1.1 L/acre ($16.50/acre), and Embutox E 1.1 L/acre ($7.00/acre) the following spring after the herbicides had been applied to the seedling grasses. Only the Lexone DF plus Embutox E showed initial injury.

TOLERANCE OF SEEDLING LEGUMES TO HERBICIDES FOR BROAD-LEAVED WEED CONTROL

Alfalfa, red clover and bird's-foot trefoil showed good tolerance to Torch D.S. 0.36 L/acre ($6.00/acre), Stampede 360 2.25 L/acre ($16.00/acre) and Embutox E 1.1 L/acre ($7.00/acre) the following spring after the herbicides had been applied to the seedling legumes. In addition, alfalfa and red clover showed good tolerance to Basagran 1.7 L/acre plus Assist 2% ($46.00/acre) and Lexone DF 0.16 kg/acre plus Embutox E 1.1 L/acre ($16.50/acre). All the herbicides initially injured the legumes except Embutox E.

INACTIVATION OF BROMACIL (HYVAR X) IN THE SOIL

Activated charcoal (Dutch Carbon Norite W-20) Field results indicated that activated charcoal ((1:400) rate of kg active ingredient of the herbicide: kg activated charcoal) incorporated into the soil effectively reduced crop injury due to bromacil residues. Barley yielded 0.96 t/acre (44.2 bu/acre), fall rye yielded 0.31 t/acre (12.3 bu/ac), crested wheatgrass yielded 70 kg/acre and alfalfa yielded 277 kg/acre. Barley was the least sensitive to bromacil residues since it was the only crop

species that grew to any extent when the activated charcoal was applied at a ratio of 1:200. Barley yield at this rate of activated charcoal was 0.60 t/acre (27.5 bu/acre). Manure applied to a 15 cm depth and incorporated did not provide any protection to the various crops from injury resulting from bromacil residues. All treatments were applied to the soil surface and rototilled to 15 cm depth four times. The activated charcoal was mixed with water and sprayed on as a thick slurry. This was an effective means of applying the activated charcoal.

Through soil analysis, a 3.8 kg/acre (active ingredient) rate of bromacil was detected, hence the rate of activated charcoal was determined to be 753 kg/ha (1:200). The cost of this treatment was approximately $1,015/acre.

EFFECT OF COVER CROP AND WEED CONTROL ON FORAGE YIELD

A forage study was established near Westlock in 1984. Second year alfalfa-bromegrass yields were lower where there was a barley cover crop seeded in the year of establishment for either grain or silage yield compared to where there was no cover crop. The alfalfa-bromegrass yields were somewhat higher where weed control had been carried out in the previous year of establishment compared to where the weeds (mostly wild oats) were allowed to grow. We are planning to harvest these same plots again in 1987 to determine if the cover crop and weed control in the year of establishment are still having an effect on alfalfa-bromegrass yield in the third year of the forage crop.

Please Note: These are only preliminary research results provided for information and not as recommendations. Most of these herbicides are not registered for the use indicated here. Also, these research highlights are only brief summaries of the research trial results. The complete write-ups are in the attached booklet. The additional information is very important in forming any conclusions about the results reported here.